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ALTHOUGH INTENDED TO BE COMPREHENSIVE, SOME ASBESTOS MAY HAVE BEEN MISSED BY THIS REPORT. SOME ASBESTOS MAY HAVE BEEN REMOVED OR INSTALLED SINCE THIS SURVEY.

Charles E. Cole 6/19/02

I. EXECUTIVE SUMMARY

An Asbestos Building Audit Survey (ABAS) was conducted in the Federal Building (NM0005ZZ) located in Carlsbad, New Mexico. The purpose of the survey is to inspect and assess this GSA operated building for the presence and condition of asbestos-containing materials (ACM) according to the General Services Administration (GSA), Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) guidance.

Suspect asbestos-containing building materials were identified by specific building locations and grouped according to EPA/AHERA descriptive categories for **THERMAL SYSTEM INSULATION, SURFACING ACM MATERIAL,** and **MISCELLANEOUS ACM MATERIAL** types. Within these descriptive categories of **ACM MATERIALS**, individual Functional Spaces (location activity, design or service function) and Homogeneous Areas (materials uniform in color, texture, or general appearance) are identified and analyzed for asbestos fiber content.

The secondary focus of the Building Audit Survey process develops documented observations and physical assessments of site-specific ACM conditions, relative to the degree of damage identified and the potential for future disturbance or release of suspect ACM fibers. The physical condition of these identified materials represent some level of concern and standardized response action.

The tertiary focus applies standardized EPA/AHERA Decision Tree/Response Action Keys for prioritizing required administrative actions, as well as preventing any additional damage or release of any suspect ACM fibers from these identified materials.

AREAS OF HIGH CONCERN (Response Action 4)

These identified **Functional Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers.** The physical conditions of damage observed represented a POTENTIAL FOR ADDITIONAL DAMAGE OR RELEASE OF SUSPECT ACM FIBERS.

Thermal System Insulation

Basement	B-5 Mechanical Room See Photograph #5	Refrigerant Suction Line Fitting Insulation (3-15% Chrys.) at Straight Pipe.
Basement	B-5 Mechanical Room See Photo #6	Domestic Water Fitting Insulation (3-15% Chrys.) near Water Heater & Boiler

AREAS OF HIGH CONCERN (Response Action 5)

These identified **Functional Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers.** The physical conditions of damage observed represented a POTENTIAL FOR ADDITIONAL DAMAGE OR RELEASE OF SUSPECT ACM FIBERS.

Thermal System Insulation

First Floor	Pipe Chase See Photograph #12	Domestic Water Fitting Insulation (3-15% Chrys.)

These materials exhibited damage at the time of the survey. They are not readily accessible but damage may become worse if disturbed.

Action Plan Recommendation

Repair, continue O&M. Numbers 4 and 5 indicate priority if all repairs cannot be done immediately.

AREAS OF MODERATE CONCERN (Response Action 6)

These identified **Functional Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers**. Physical conditions represent a POTENTIAL FOR DAMAGE OR RELEASE OF SUSPECT ACM FIBERS.

Thermal System Insulation

Basement:	
Mechanical Areas;	Boiler Exhaust Flue (5-10% Chrysotile) Rectangular Duct Insulation (3-25% Chrysotile) Duct Mastic (3-15% Chrysotile) Domestic Water Fittings (3-15% Chrysotile) Refrigerant Piping Fittings (3-15% Chrysotile) Hot Water Heating Fittings (3-15% Chrysotile)
Rest Room B-8:	Domestic Water Fittings (3-15% Chrysotile)
First Floor:	Rectangular Duct Insulation (3-15% Chrysotile)

These materials did not exhibit damage at the time of the survey, but they can be accessible during maintenance work and may become friable if disturbed or damaged.

Action Plan Recommendation

Continue O & M. Take preventive measures to reduce disturbance. Number indicates priority for removal.

AREAS OF MODERATE CONCERN (Response Action 7)

These identified **Functional Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers**. The physical assessments were all judged to have NO DAMAGE but there is a POTENTIAL FOR DAMAGE OR RELEASE OF SUSPECT ACM FIBERS.

Thermal System Insulation

Basement through First Floor Plenums*	Domestic Water Fittings (3-15% Chrysotile) Drinking Water Fitting Insulation (3-15% Chrysotile) Hot Water Heating Fittings (3-15% Chrysotile) Rectangular Duct Insulation (3-15% Chrysotile) Roof Drain Fittings** (Assumed 3-15% Chrysotile)

These materials did not exhibit damage at the time of the survey.

Action Plan Recommendations

Continue O&M. Take preventive measures to reduce disturbance. Number indicates priority for removal.

* The term plenum in this case is used to describe the air space above suspended ceilings. These areas are not necessarily used for air movement. Since these are difficult to assess, no detailed verification could be made concerning the presence or amount of suspect ACM. Domestic water and heating water pipes are concealed in these plenums. Straight pipes have fiber glass insulation and their fittings are considered to have asbestos containing insulation, consistent with piping throughout the building. Quantities were estimated from original piping schedules.

** Samples from roof drain pipe fitting insulation, shown on prints to be concealed in exterior walls, were not collected. All other straight pipes were fiber glass insulated except for their fittings which were 3-15% Chrysotile. Under this circumstance, strict AHERA protocol requires that all manifestations of roof drain fitting insulation be considered asbestos containing, and it is treated as such in this report.

AREAS OF LOW CONCERN (Response Action 8)

These identified **Function Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers**, but pose minimal health hazard, as long as these materials are properly maintained.

Miscellaneous ACM Materials

Basement Corridors, B-8;	9x9 Brown Floor Tile (5% Chrysotile) Mastic Under 9x9 Brown Floor Tile (5-10% Chrys.)
Basement through 1st Floor;	9x9 Light Blue Floor Tile (5% Chrysotile) (Basement - Storage in B-8; First Floor - Offices)
First Floor;	Mastic Under 9x9 Blue Floor Tile (5-10% Chrysotile)
First Floor Corridors, Second Floor Room 201	9x9 White Floor Tile (5% Chrysotile) Mastic Under 9x9 White Floor Tile (5-10% Chrysotile)
First Floor Room 153 - Computer Room	12x12 White Floor Tile/Brown Streaks (5% Chrysotile)

These non-friable materials did not exhibit damage at the time of the survey.

Action Plan Recommendations

Continue O&M until major renovation or demolition requires removal under NESHAPS, or until assessment factors change.

II. INTRODUCTION

The GSA Region 7, Safety and Environmental Management Branch has initiated a standardized Regional Asbestos Management Program. This Asbestos Program utilizes an Asbestos Audit Survey process for standardizing information related to the management of asbestos within GSA-controlled spaces.

Under this program, the Federal Building (NM0005ZZ) located in Carlsbad, New Mexico was surveyed for the specific identification/location of all suspect asbestos-containing materials (ACMs) during July

1993. This Asbestos Building Audit Survey was scheduled in accordance with the terms of a Task Order Request issued by the General Services Administration (GSA) Region 7, Safety and Environmental Management Branch of the Fort Worth Regional Office.

This Building Audit Survey documentation should assist Asbestos Program Managers (APM) in servicing asbestos related operation/maintenance programs. Such survey report information should administratively support the Asbestos Program Manager responsibilities for maintaining/updating asbestos program documentation, tracking current/ongoing asbestos operations/maintenance programs; annual surveillance inspection requirements; and any recommended asbestos reinspection/response action requirements.

III. FACILITY DESCRIPTION

The Federal Building at South Halagueno and West Fox Streets in Carlsbad, New Mexico is primarily a one story structure with a partial basement and a small second floor. Erected in 1951, the reinforced concrete structure rests on a concrete pier foundation. It has approximately 23,000 gross square feet of floor space. At the time of this audit, it housed several federal agencies and the Pecos River Commission which will soon be vacating.

Heating and cooling is provided by a forced air system with an air handling unit located in the basement. A roof-mounted cooling tower is connected by uninsulated piping to the unit which supplies the refrigerant to this AHU. Heating water is supplied by a low pressure boiler in the mechanical room. The refrigerant and heating water piping systems are insulated. Domestic water is supplied by the city of Carlsbad. A water heater in the basement provides hot water for the restrooms. Drinking water is chilled at the corridor drinking fountains.

Interior finishes include painted plaster on exterior walls, drywall interior partitions, glued-on acoustical ceiling tiles, dropped acoustical tile ceilings, and concrete floors usually overlain by floor tiles and/or carpet. All were in good condition.

IV. BUILDING AUDIT SURVEY STRATEGY AND METHODOLOGY

The primary focus of the Building Audit Survey process is to identify suspect materials within a Federal Building which contain or are likely to contain asbestos: This involves:

1. the location, description, and estimation of the quantity for all known or suspected asbestos containing facility materials;

This phase of the Audit Survey process generally applies **EPA//AHERA** criteria for grouping suspect asbestos-containing building materials into four major descriptive categories:

a. **SURFACING MATERIALS**, which includes materials on walls; ceilings and structural building members usually applied by spray for acoustical or fire-proofing function;

b. **THERMAL SYSTEM INSULATION**, which encompasses tank, boiler, pipe and vessel insulation used for temperature or condensation control;

c. **MISCELLANEOUS MATERIALS**, which includes primarily floor and ceiling tiles, integral building members and structural components, or fixtures;

d. **OTHER MATERIALS**, which includes such items as asbestos gloves or curtains incidental to building occupancy/activities.

2. the qualification and identification of all facility functional spaces and homogeneous areas.

Site specific information will attempt to quality "**functional**" **spaces** by location activity, design or service function. The classification of the facility "**homogenous**" **groups** will be based on referenced **EPA/AHERA** criteria for grouping materials within a specific building which are uniform in color, construction/application date, texture, and general appearance.

V. SUMMARY OF ACM FINDINGS

Although samples were not collected for all building locations, some suspect asbestos-containing material conditions may warrant special treatment, due to historical site information or professional judgement. **EPA/AHERA** protocol (40 CFR Part 763, Subpart E) recommends that when a single sample of a homogeneous area is confirmed to be asbestos-containing, then all manifestations of that material should be considered asbestos-containing.

Note: Information provided at the time of the Asbestos Building Audit (Federal Building - NM0005ZZ), did not identify specific information about; INACCESSIBLE AREAS, FIRE DOORS, and CRAWL SPACES, which might have contained Suspect Asbestos-Containing Materials. The MSHA Change Room B-2 has been renovated with asbestos-free materials.

Thermal System Insulation

This category includes all types and shapes of **INSULATION MATERIALS** (PIPE LAGGING/FITTINGS/ BOILER BREECHING) used for temperature or condensation control and identified in the following locations:

Material Type	Locations	Quantity	Functional Space Type	Asbestos
Boiler Exhaust Flue	Basement	120 sq ft	Mechanical	5-10% Chrys
Boiler Refactory	Basement	150 sq ft	Mechanical	Assumed
HVAC Duct Mastic	Basement	16 lin ft	Mechanical	5-15% Chrys
HVAC Duct Wrap	Throughout	1,150 sq ft	Mechanical, 1st Fl Stairwell	3-15% Chrys
Pipe Fitting Insulation				
Hot Water Heating Fittings	Throughout	59 ea 34 ea	Mechanical, Crawl Space, **Concealed spaces to first floor heaters	3-15% Chrys
Domestic Water Fittings	Throughout	117 ea	Mechanical, Pipe Chase **Concealed spaces in rest room walls, crawl space, Room 128, Ceiling plenum and exterior walls.	3-15% Chrys

Material Type	Locations	Quantity	Functional Space Type	Asbestos
Pipe Fitting Insulation Continued				
HVAC Refrigerant Line Fittings	Basement	26 ea	Mechanical	3-15% Chrys
Roof Drain Fittings	Throughout	4 ea	**Concealed spaces B-2 and B-4-J exterior walls	Assumed

** Plenum quantities are estimated using visual observation and original building drawings.

NOTE: The term plenum in this case is used to describe the air space above the drop ceilings and plaster ceilings. These areas are not necessarily used for air movement. Since these areas are difficult to assess, no detailed verification could be made concerning the presence or amount of suspect ACM. The term fittings includes elbows, valves and tees. Quantity estimates are based on quantities observed during the inspection followed by an estimate of quantities concealed in plenums, chases, and other concealed areas made by reviewing available plans and increasing these figures 25% to allow for subsequent modifications and alterations.

Surfacing ACM Materials

This category includes all the **SPRAY-APPLIED DECORATIVE WALL and CEILING TEXTURES.**

There were no surfacing materials identified as containing asbestos.

Miscellaneous ACM Materials

This category includes primarily FLOOR TILE, CEILING TILE AND MASTICS.

Material Type	Locations	Quantity	Functional Space Type	Asbestos
Floor Tiles:				
9x9 Brown	Basement	650 sq ft	Corridors, locker & toilet rooms	5% Chrys
9x9 Light Blue	Bst & 1st Fl	10,555 sq ft	New Tiles storage and offices	5% Chrys
9x9 White	1st & 2nd Fls	2,249 sq ft	Corridors and offices	5% Chrys
12x12 White/Brown Streaks	First Floor	138 sq ft	Office	5% Chrys
*Floor Tile Mastic:				
9x9 Brown	Basement	650 sq ft	Corridors, locker & toilet rooms	5-10% Chrys
9x9 Light Blue	First Floor	10,355 sq ft	Offices	5-10% Chrys
9x9 White	1st & 2nd Fls	2,249 sq ft	Corridors and office	5-10% Chrys

* Includes all 9"x9" floor tile found throughout the building.

NOTE: In some cases, 9"x 9" Floor Tile was overlain by carpet. Every effort was made to accurately identify floor tile quantities in all areas. Should future renovations require abatement of large quantities of floor tile, the GSA may elect to re-evaluate quantity estimates. The quantity shown reflects only the amounts verified by GSA knowledge of existing tile where new carpeting was installed.

Suspect Materials Not Sampled

This category includes materials which could not be accessed at the time of the site visit or could not be sampled without using destructive methods. The boiler refractory material could not be sampled and is assumed to be asbestos containing. Roof drain fittings concealed in exterior walls are also assumed to be asbestos containing.

FIRE DOORS- All doors observed within the facility were of laminated wood construction. None could be sampled without using destructive techniques. Any suspect doors which will be drilled through, cut, or disposed should be sampled and verified as non asbestos-containing.

ROOFING MATERIALS - Survey protocol has designated roofing materials to be suspect ACM. Hence, the material should be considered asbestos-containing until sampled and verified otherwise.

NOTE: See Figure 1 - ACM HOMOGENEOUS AREAS/FLOOR PLAN LOCATIONS:

These figures group together all the Building Floor Plan information for each floor referencing specifically the locations of all suspect materials within HOMOGENEOUS AREAS that were positively identified as asbestos-containing (based on confirmation by laboratory analysis). Homogenous area locations are identified by separate floor plan drawings for thermal system insulation, and miscellaneous materials. No ACM surfacing materials were found.

Appendix G groups together all the Building Floor Plan information for each floor of the building based on locations initially observed for each group of **ACM HOMOGENEOUS AREAS (CEILINGS, BASEBOARDS, ... ETC.)**. These identifications represent only survey observations made prior to laboratory analysis of **BULK SAMPLES** and confirmation as **ASBESTOS CONTAINING MATERIALS**. This appendix will serve as a reference.

ACM HOMOGENEOUS AREAS/FLOOR PLAN LOCATIONS

INDEX TO FIGURE 1

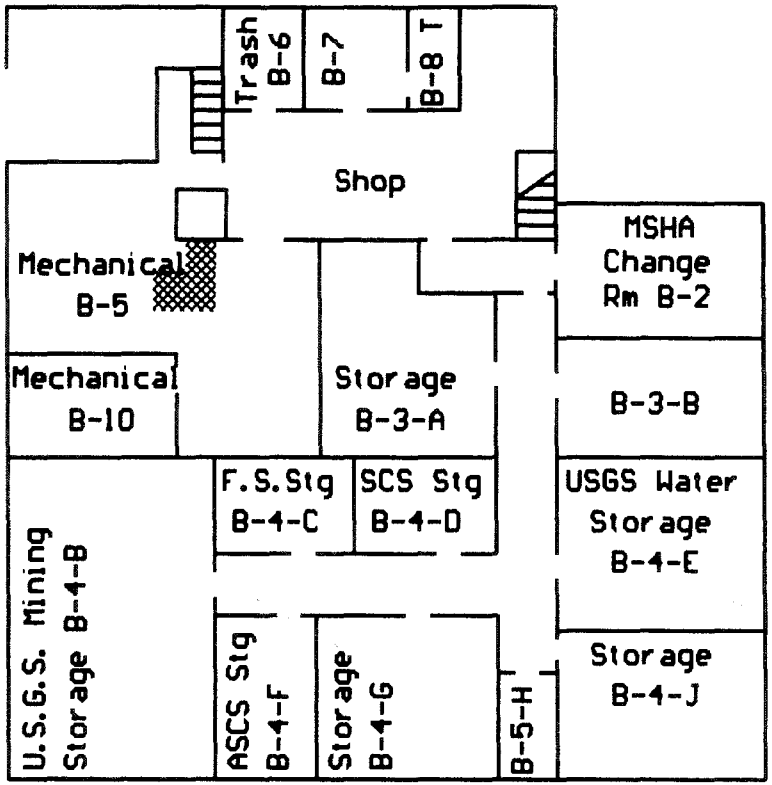


Figure 1.1
Basement Floor

Boiler Exhaust Flue
ACM Homogeneous Area

Boiler Exhaust Flue

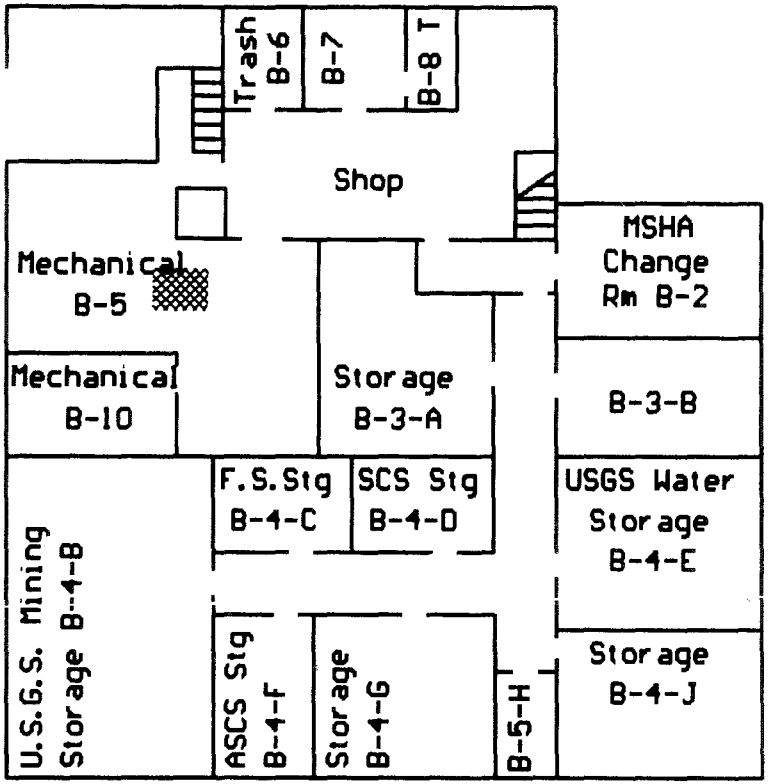


Figure 1.2
Basement Floor

Boiler Refractory
ACM Homogeneous Area

Boiler Refractory

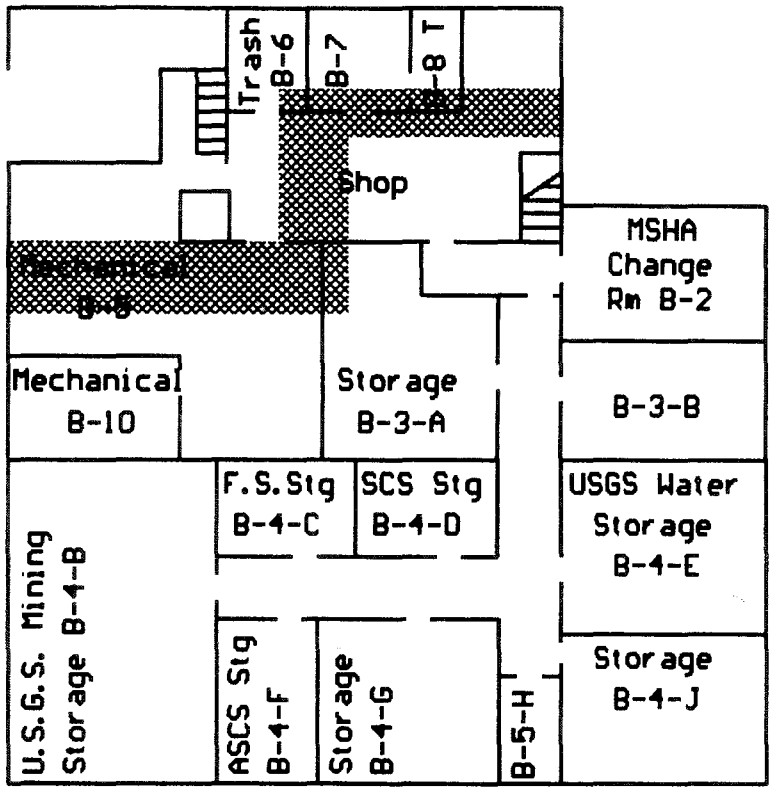


Figure 1.3
Basement Floor

Hot Water Heating Fittings
ACM Homogeneous Area

Hot Water Heating Fittings

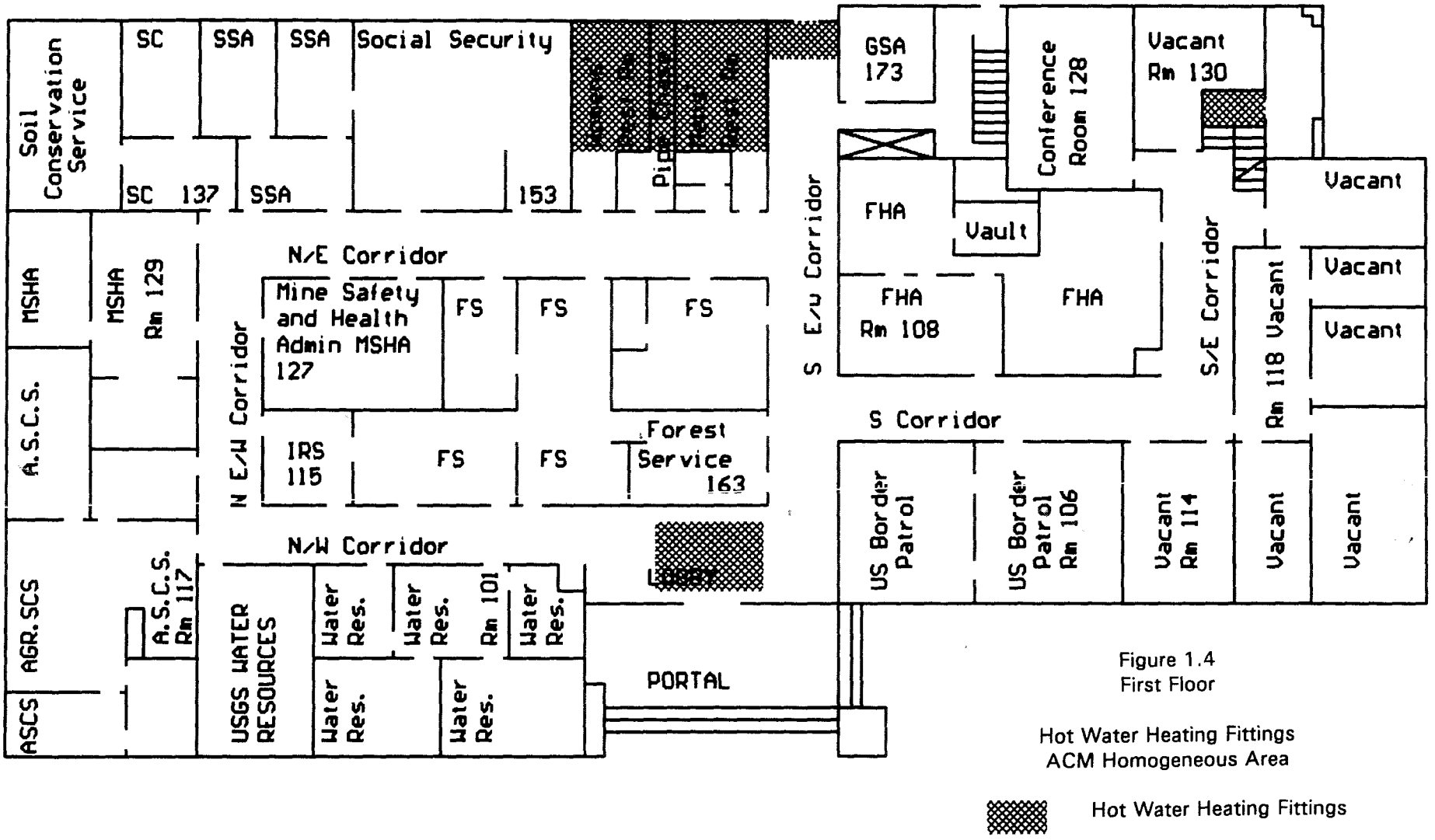


Figure 1.4
First Floor

Hot Water Heating Fittings
ACM Homogeneous Area

Hot Water Heating Fittings

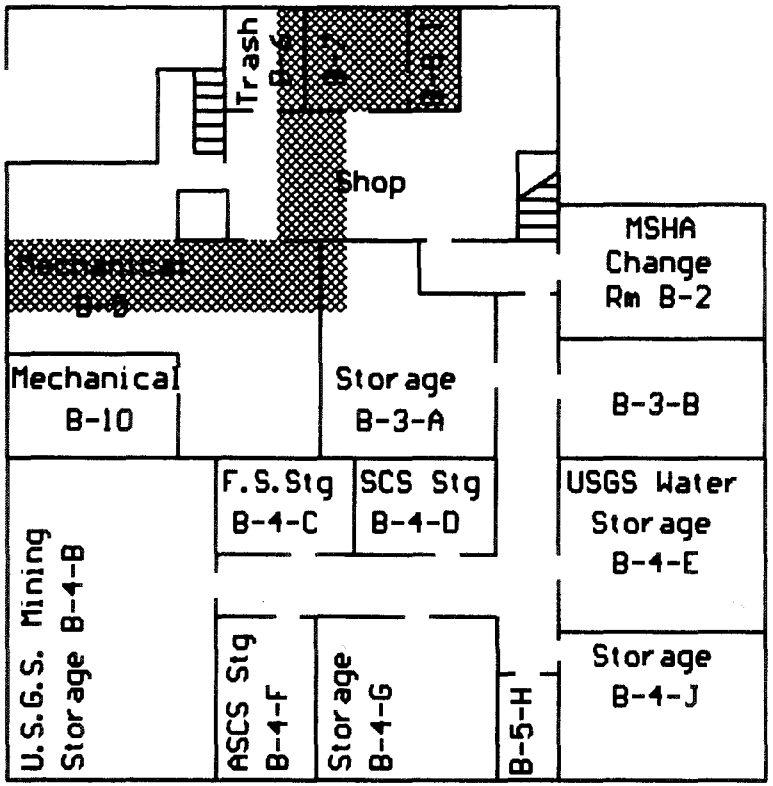


Figure 1.5
Basement Floor

Domestic Hot Water Fittings
ACM Homogeneous Area

Domestic Hot Water Fittings

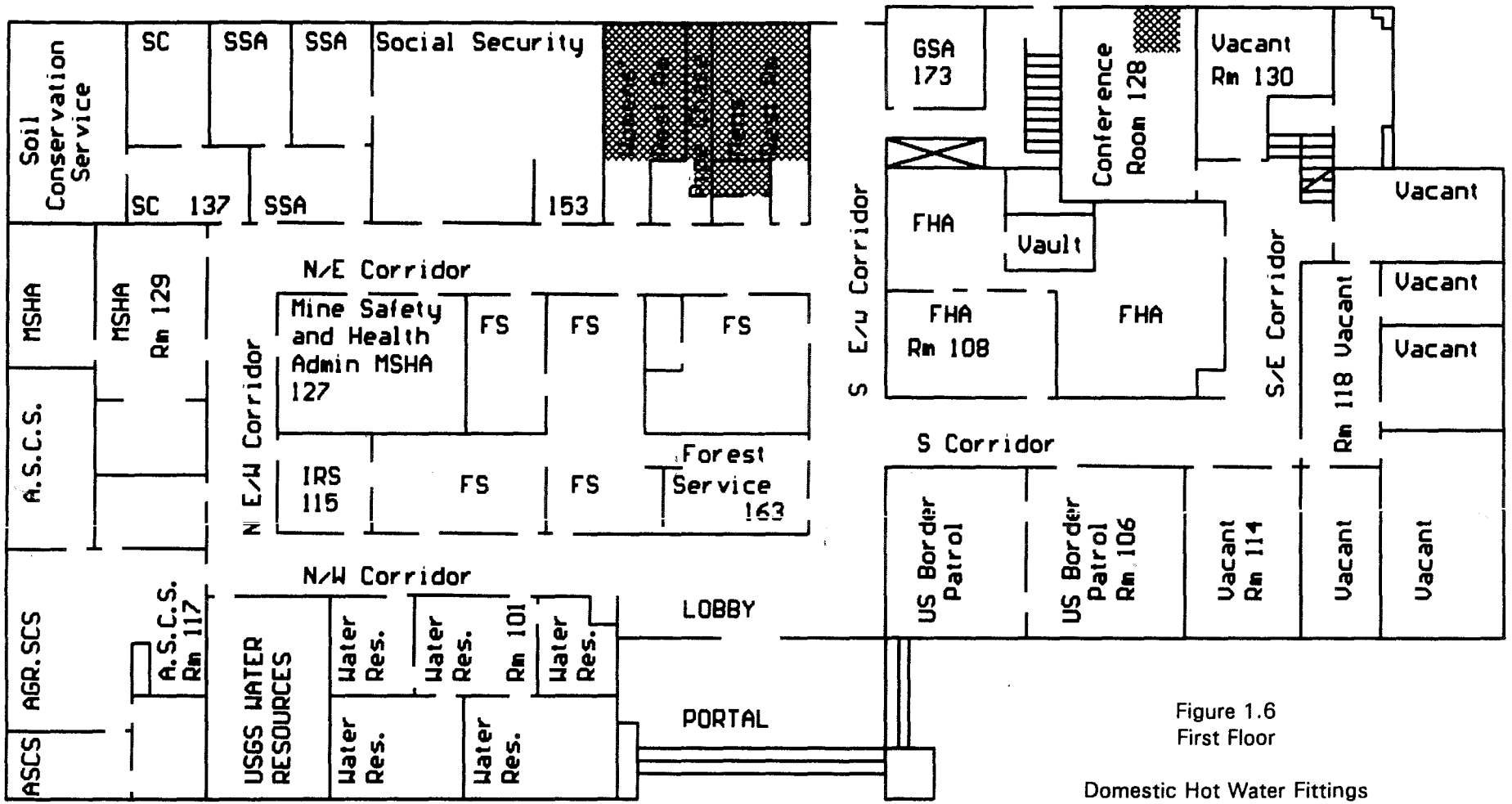


Figure 1.6
First Floor

Domestic Hot Water Fittings
ACM Homogeneous Area

Domestic Hot Water Fittings

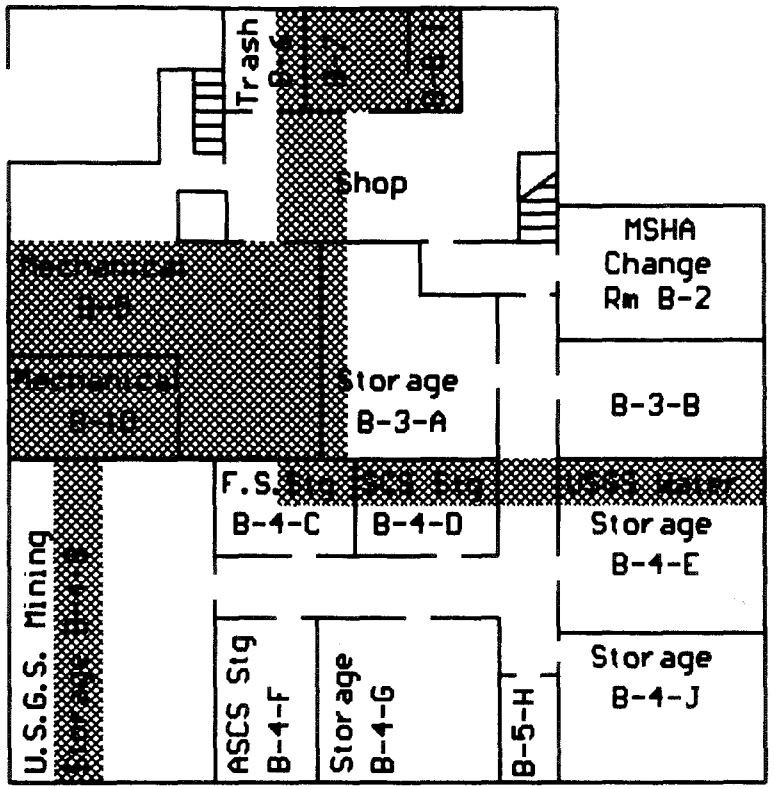


Figure 1.7
Basement Floor

Domestic Cold Water Fittings
ACM Homogeneous Area

Domestic Cold Water Fittings

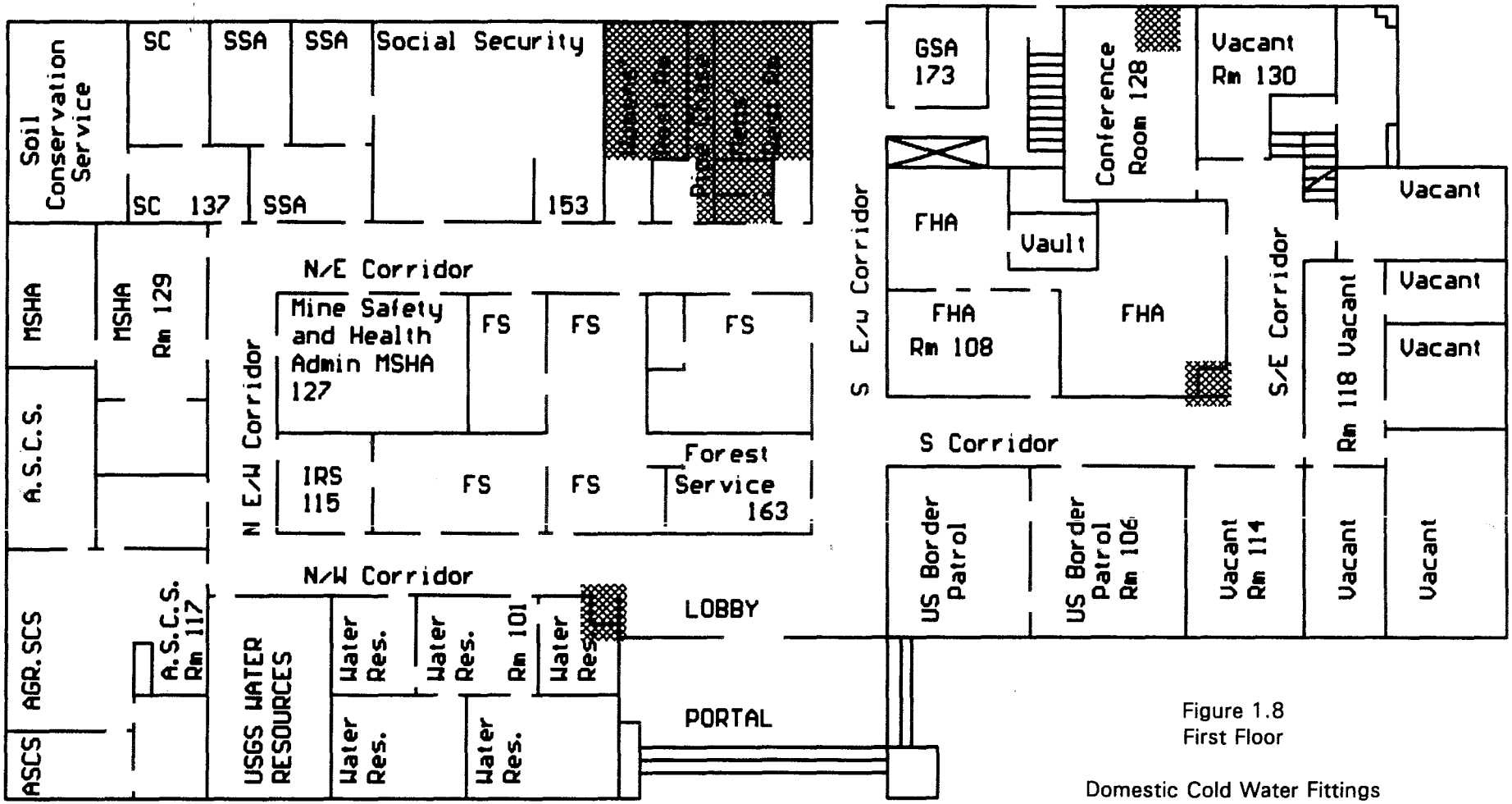


Figure 1.8
First Floor

Domestic Cold Water Fittings
ACM Homogeneous Area

Domestic Cold Water Fittings

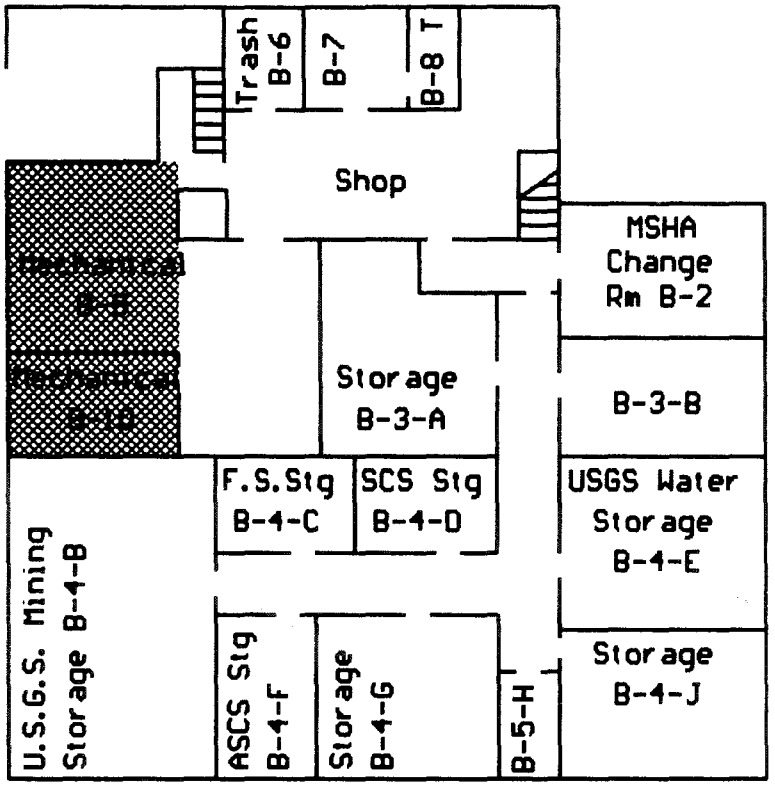


Figure 1.9
Basement Floor

HVAC Refrigerant Line Fittings
ACM Homogeneous Area

HVAC Refrigerant Line Fittings

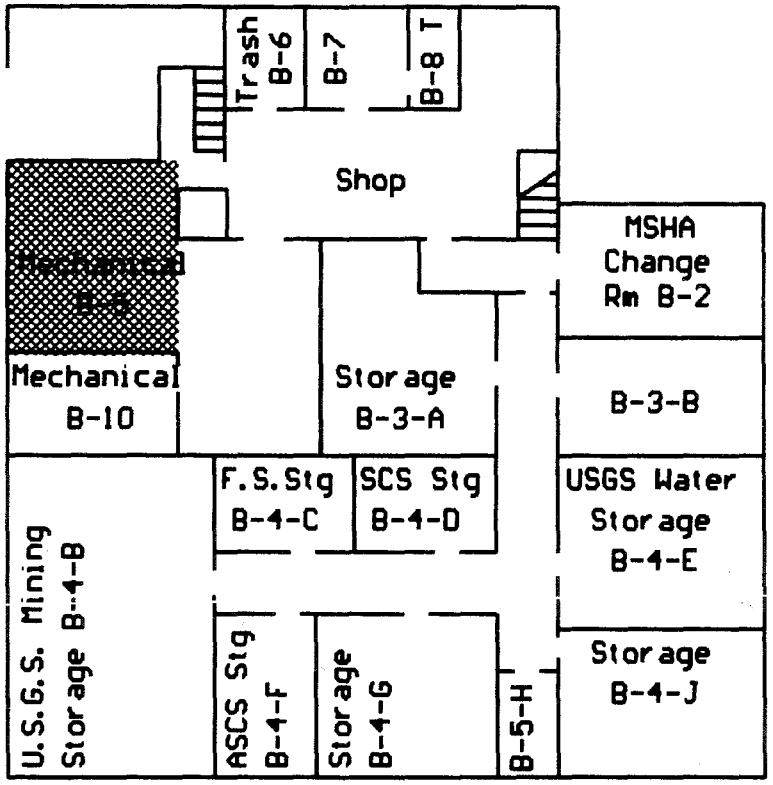


Figure 1.10
Basement Floor

HVAC Duct Mastic
ACM Homogeneous Area

HVAC Duct Mastic

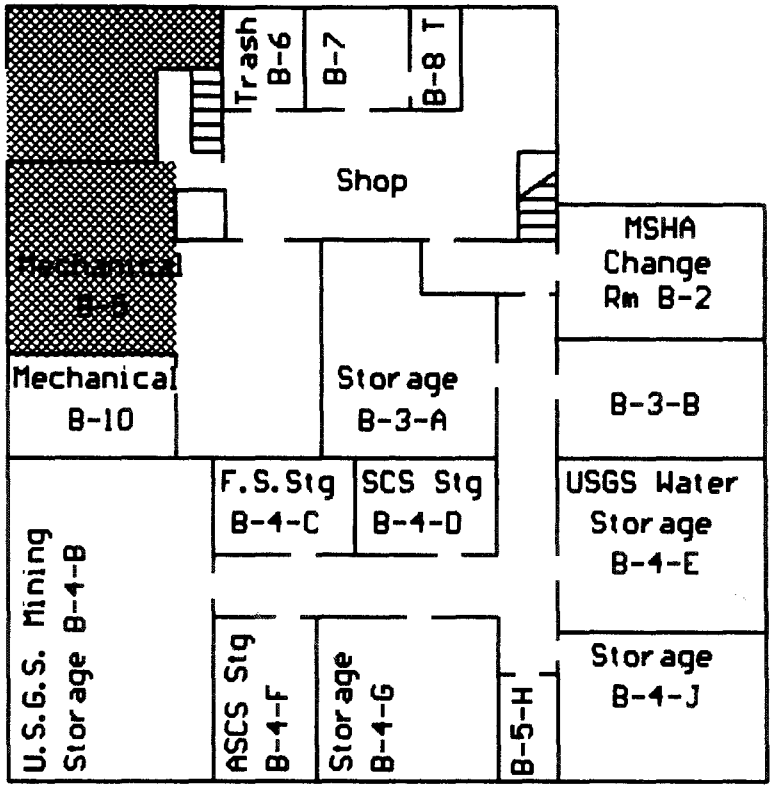


Figure 1.11
Basement Floor

HVAC Duct Wrap
ACM Homogeneous Area

HVAC Duct Wrap

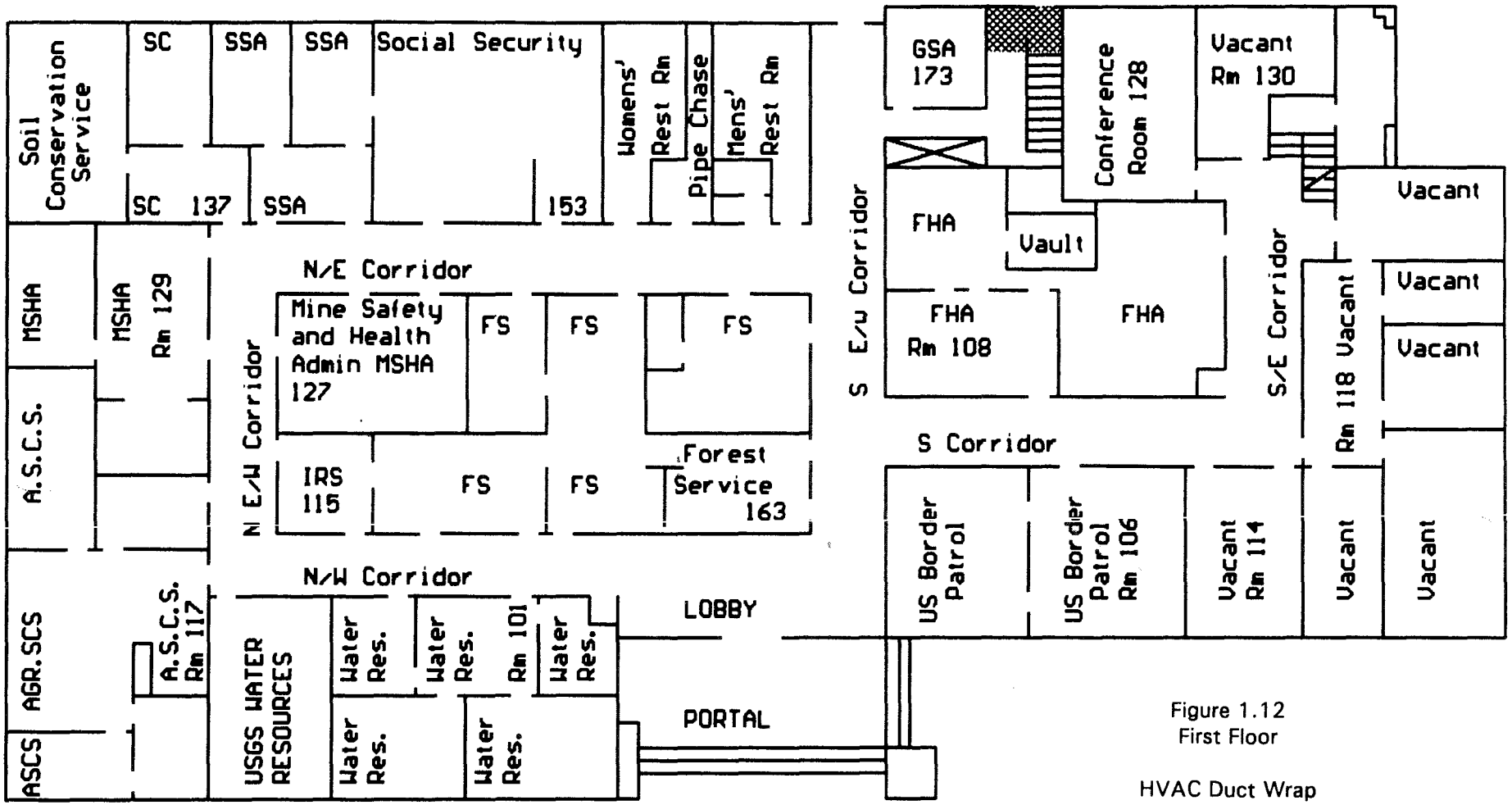


Figure 1.12
First Floor

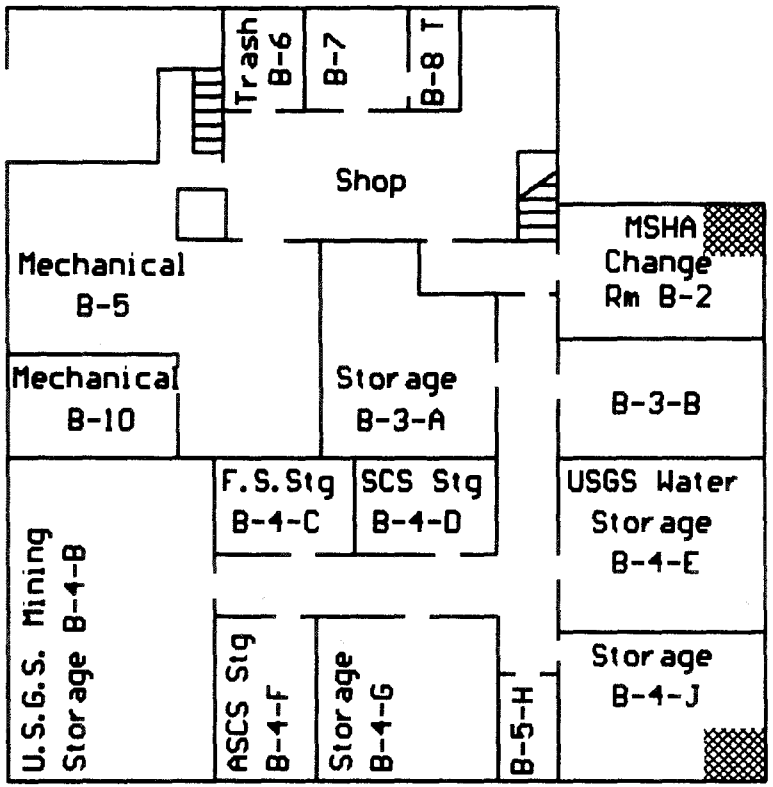


Figure 1.13
Basement Floor

Roof Drain Fittings
ACM Homogeneous Area

Roof Drain Fittings

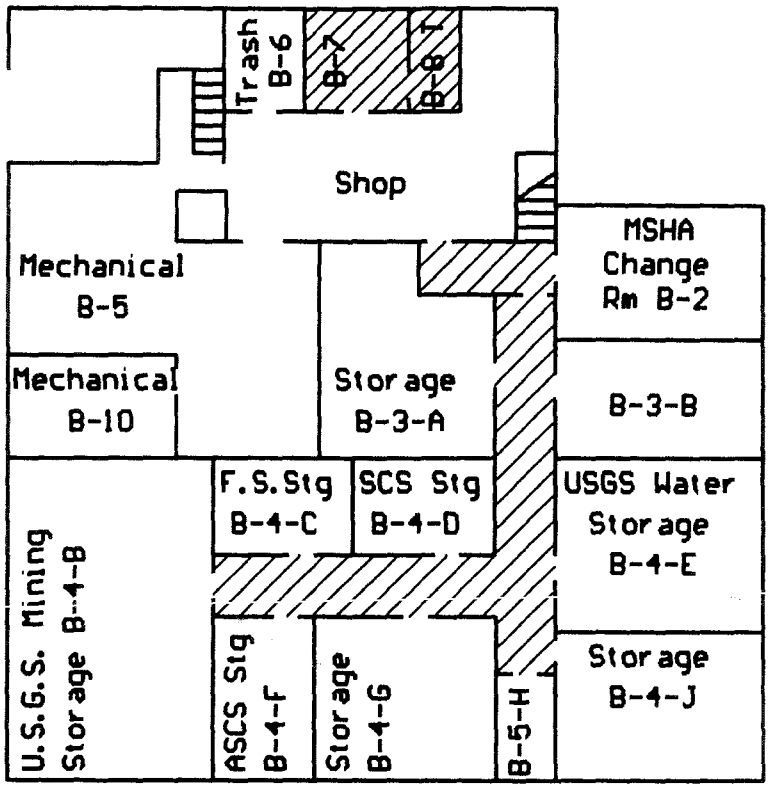


Figure 1.14
Basement Floor

Floor Tile 9x9 Brown
ACM Homogeneous Area

Floor Tile 9x9 Brown

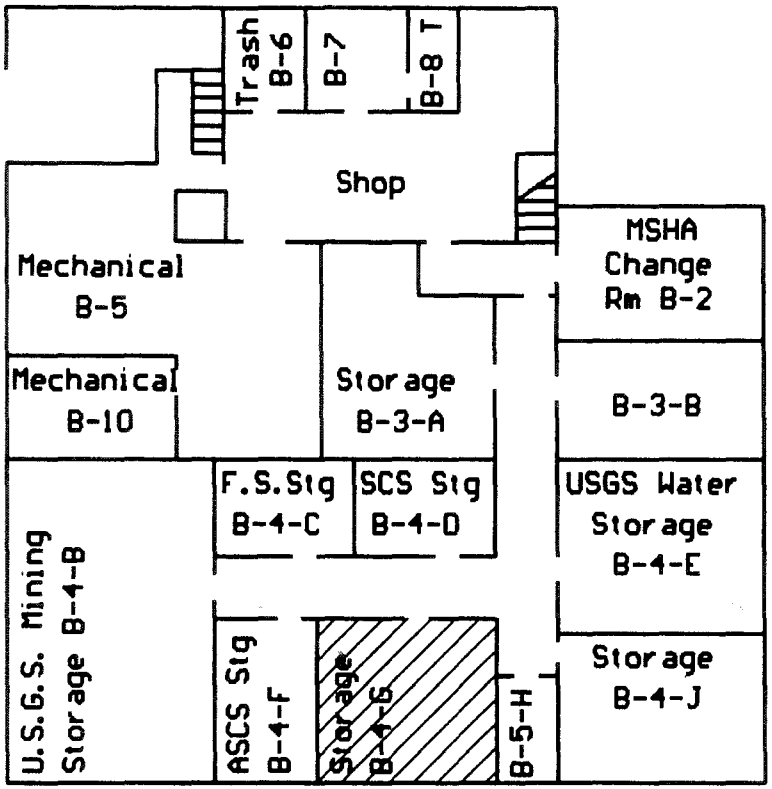


Figure 1.15
Basement Floor

Floor Tile 9x9 Light Blue (stored in boxes)
ACM Homogeneous Area

Floor Tile 9x9 Light Blue
(stored in boxes)

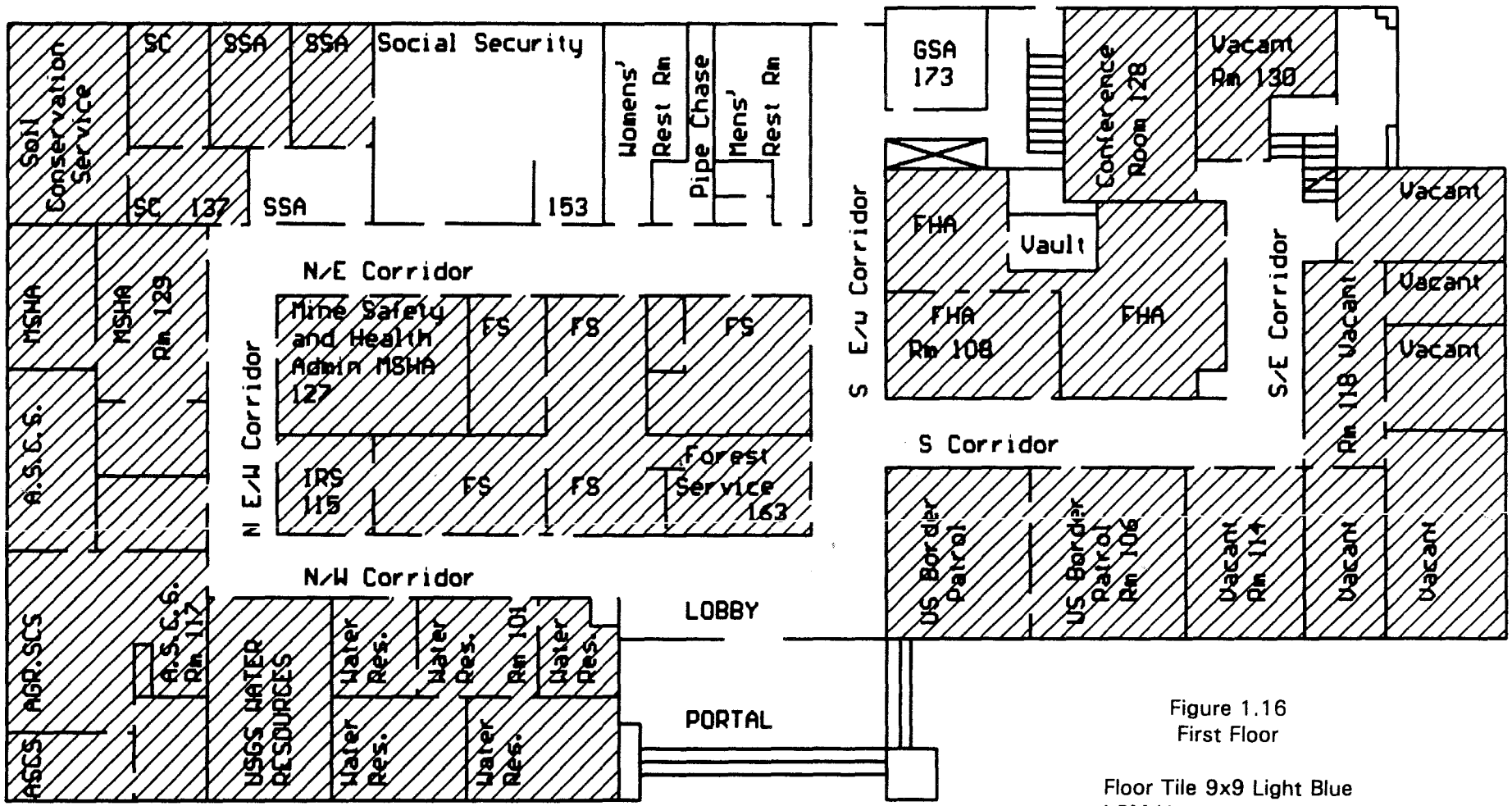


Figure 1.16
First Floor

Floor Tile 9x9 Light Blue
ACM Homogeneous Area

Floor Tile 9x9 Light Blue

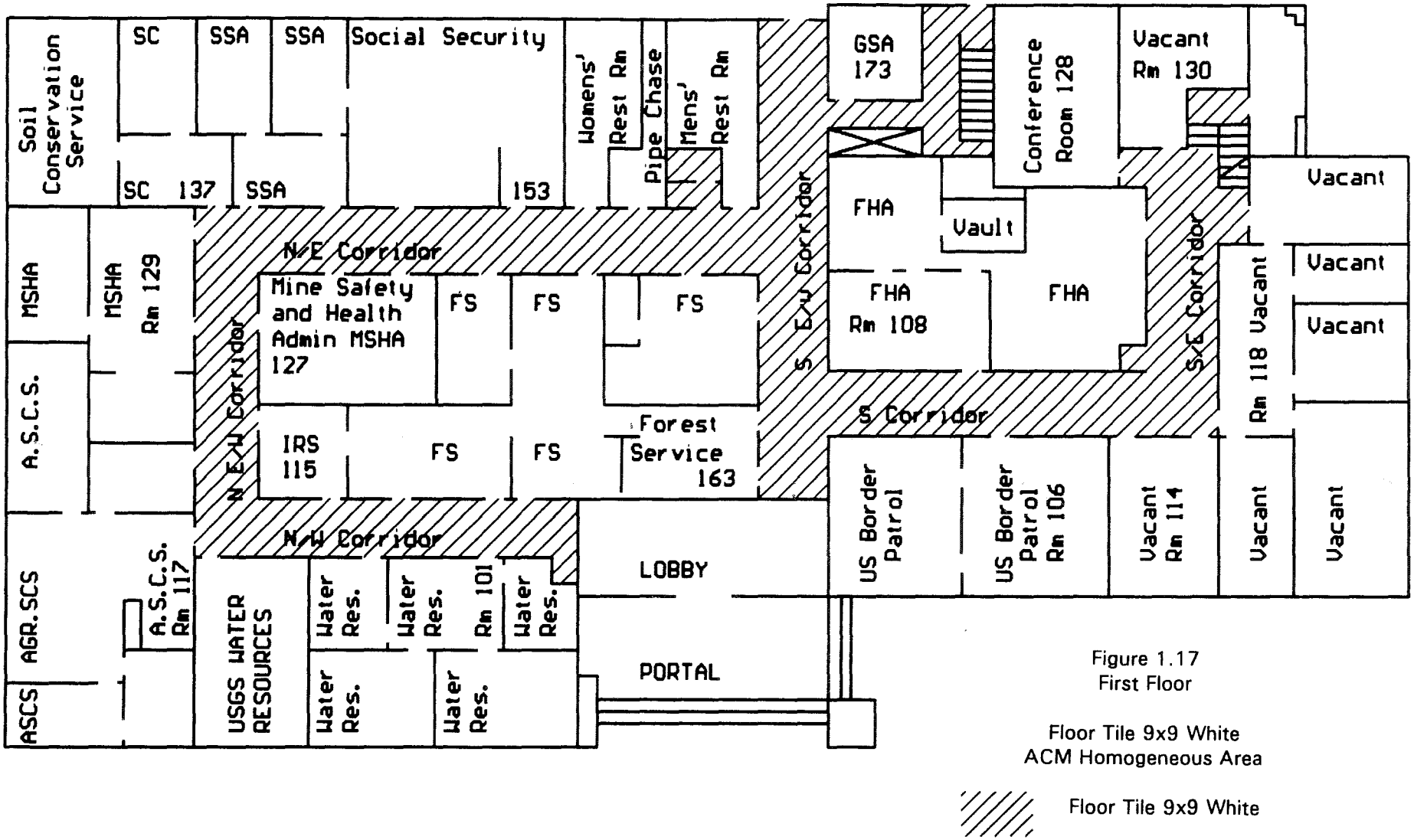


Figure 1.17
First Floor

Floor Tile 9x9 White
ACM Homogeneous Area

Floor Tile 9x9 White

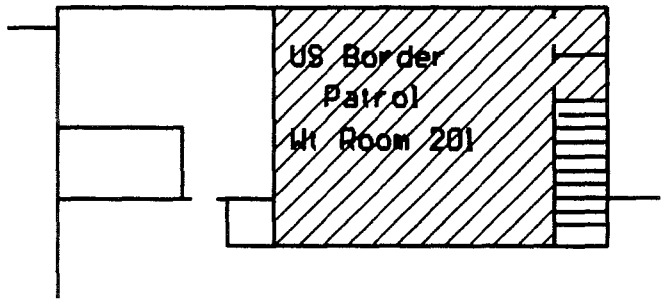


Figure 1.18
Second Floor

Floor Tile 9x9 White
ACM Homogeneous Area

Floor Tile 9x9 White

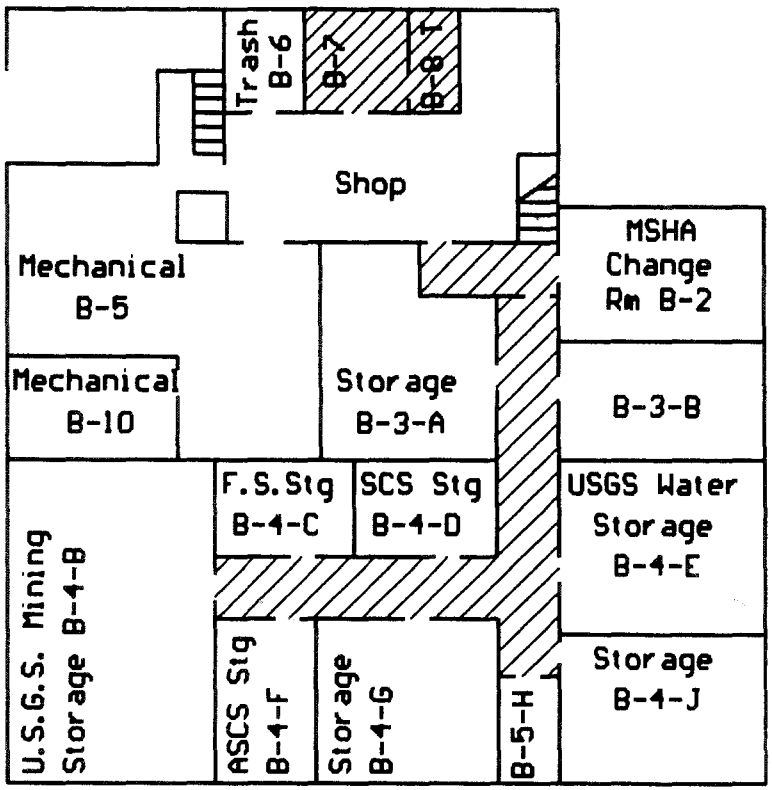


Figure 1.19
Basement Floor

9x9 Floor Tile Mastic
ACM Homogeneous Area

9x9 Floor Tile Mastic

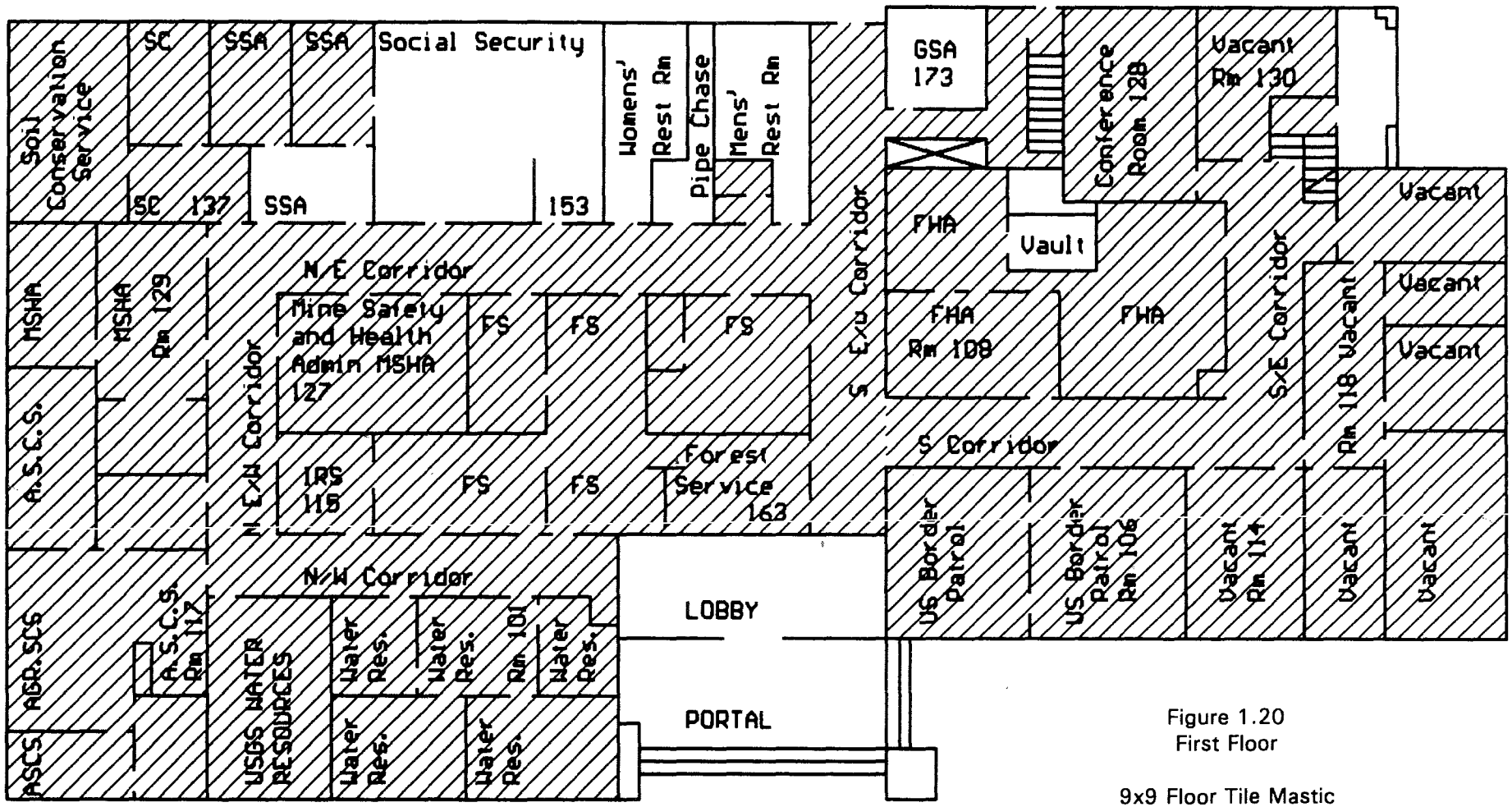


Figure 1.20
First Floor

9x9 Floor Tile Mastic
ACM Homogeneous Area

9x9 Floor Tile Mastic

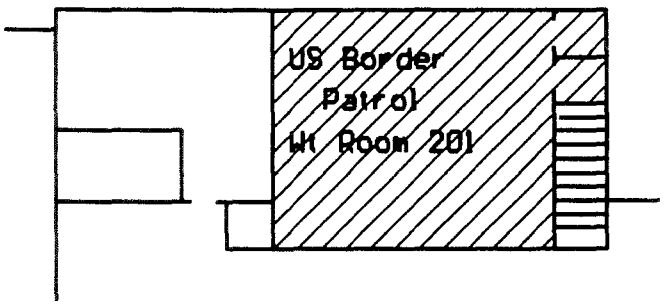


Figure 1.21
Second Floor

9x9 Floor Tile Mastic
ACM Homogeneous Area

9x9 Floor Tile Mastic

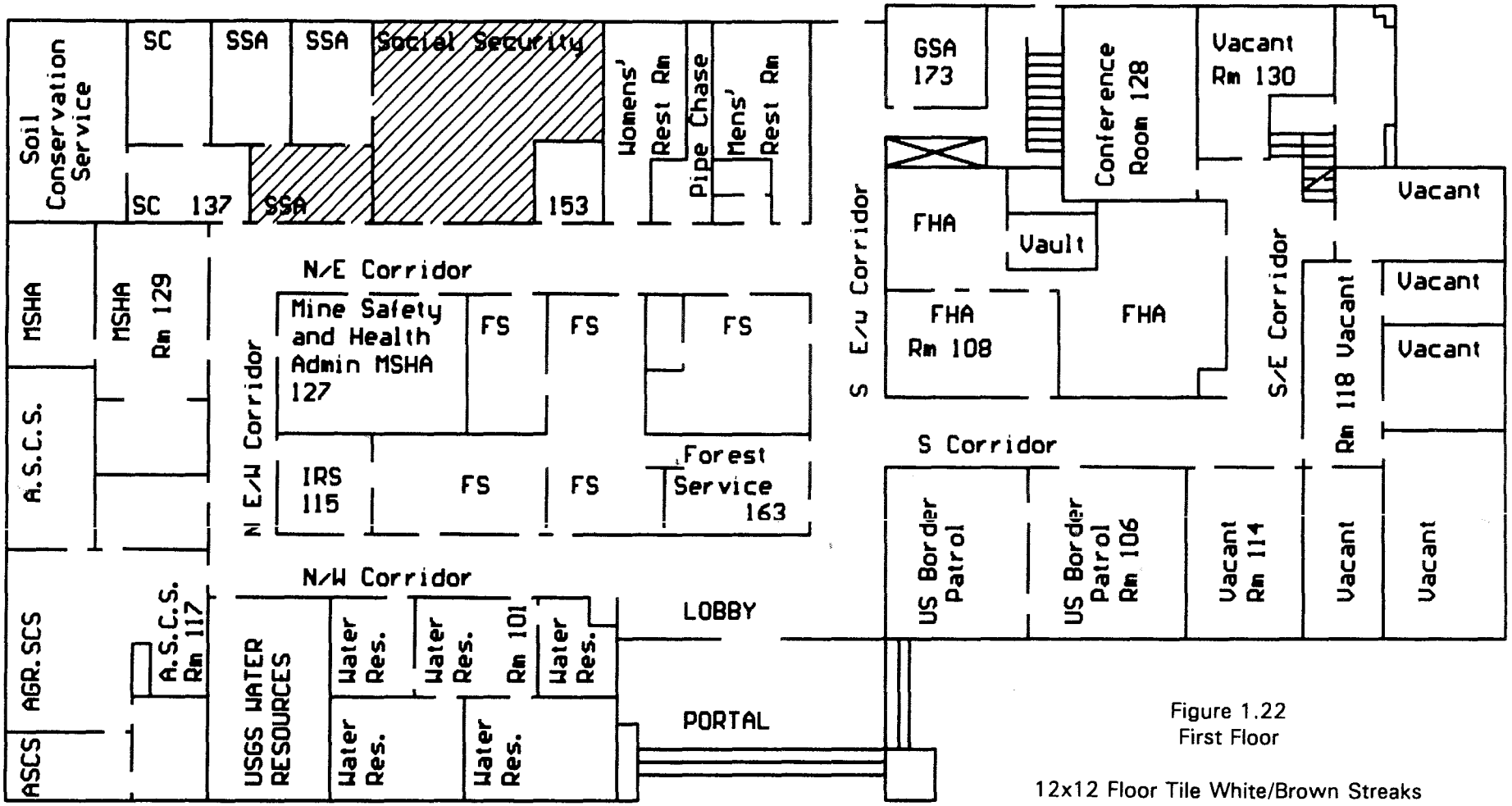


Figure 1.22
First Floor

12x12 Floor Tile White/Brown Streaks
ACM Homogeneous Area

12x12 Floor Tile White/Brown Streaks

VI. PHYSICAL ASSESSMENT OF ACM CONDITIONS

As a result of the survey, the presence of asbestos was documented for several types of building materials. The physical assessments for these materials are summarized below.

AREAS OF IMMEDIATE CONCERN (Response Action 1)

There were no physical conditions observed which would normally represent the identification of FRIABLE asbestos-containing material types with SIGNIFICANT DAMAGE conditions.

AREAS OF HIGH CONCERN (Response Actions 2-5)

There were physical conditions of damage observed which represented a POTENTIAL FOR ADDITIONAL DAMAGE OR RELEASE OF SUSPECT ACM FIBERS.

AREAS OF HIGH CONCERN (Response Action 4)

These identified **Functional Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers.** Physical conditions represent a POTENTIAL FOR ADDITIONAL DAMAGE OR RELEASE OF SUSPECT ACM FIBERS.

Thermal System Insulation

Basement	B-5 Mechanical Room See Photograph #5	Refrigerant Suction Line Fitting Insulation (3-15% Chrys.) at Straight Pipe.
Basement	B-5 Mechanical Room See Photo #6	Domestic Water Fitting Insulation (3-15% Chrys.) in mechanical areas and near Water Heater & Boiler

AREAS OF HIGH CONCERN (Response Action 5)

These identified **Functional Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers.** The physical conditions of damage observed represented a POTENTIAL FOR ADDITIONAL DAMAGE OR RELEASE OF SUSPECT ACM FIBERS.

Thermal System Insulation

First Floor	Pipe Chase See Photograph #12	Domestic Water Fitting Insulation (3-15% Chrys.)

These materials exhibited damage at the time of the survey. They are not readily accessible but damage may become worse if disturbed.

AREAS OF MODERATE CONCERN (Response Action 6)

These identified **Functional Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers**. Physical conditions represent a POTENTIAL FOR DAMAGE OR RELEASE OF SUSPECT ACM FIBERS.

Thermal System Insulation

Basement:	
Mechanical Areas;	Boiler Exhaust Flue (5-10% Chrysotile)
	Rectangular Duct Insulation (3-25% Chrysotile)
	Duct Mastic (3-15% Chrysotile)
	Domestic Water Fittings (3-15% Chrysotile)
	Refrigerant Piping Fittings (3-15% Chrysotile)
	Hot Water Heating Fittings (3-15% Chrysotile)
First Floor:	
Basement Stairwell	Rectangular Duct Insulation (3-15% Chrysotile)
Pipe Chase	Domestic Water Fittings (3-15% Chrysotile)

These materials did not exhibit damage at the time of the survey, but they can be accessible during maintenance work and may become friable if disturbed or damaged.

AREAS OF MODERATE CONCERN (Response Action 7)

These identified **Functional Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers**. The physical assessments were all judged to have NO DAMAGE but there is a POTENTIAL FOR DAMAGE OR RELEASE OF SUSPECT ACM FIBERS.

Thermal System Insulation

Basement through First:	
Plenums*	Domestic Water Fittings (3-15% Chrysotile)
	Drinking Water Fitting Insulation (3-15% Chrysotile)
	Hot Water Heating Fittings (3-15% Chrysotile)
	Rectangular Duct Insulation (3-15% Chrysotile)
Concealed in Walls	Roof Drain Fittings** (Assumed 3-15% Chrysotile)
	Domestic Water Fittings (3-15% Chrysotile)

These materials did not exhibit damage at the time of the survey.

* The term plenum in this case is used to describe the air space above suspended ceilings. These areas are not necessarily used for air movement. Since these are difficult to assess, no detailed verification could be made concerning the presence or amount of suspect ACM. Domestic water and heating water pipes are concealed in these plenums. Straight pipes have fiber glass insulation and their fittings are considered to have asbestos containing insulation, consistent with piping throughout the building. Quantities were estimated from original piping schedules.

** Samples from roof drain pipe fitting insulation, shown on prints to be concealed in exterior walls, were not collected. All other straight pipes were fiber glass insulated except for their fittings which were 3-15% Chrysotile. Under this circumstance, strict AHERA protocol requires that all manifestations of roof drain fitting insulation be considered asbestos containing, and it is treated as such in this report.

AREAS OF LOW CONCERN (Response Action 8)

These identified **Function Spaces** and **Homogeneous Areas** were positively identified to contain **ACM Fibers,** but pose minimal health hazard, as long as these materials are properly maintained.

Miscellaneous ACM Materials

Basement Corridors, B-7;	9x9 Brown Floor Tile (5% Chrysotile) Mastic Under 9x9 Brown Floor Tile (5-10% Chrys.)
Basement through 1st Floor;	9x9 Light Blue Floor Tile (5% Chrysotile) (Basement - Storage in B-4-G; First Floor - Offices)
First Floor;	Mastic Under 9x9 Blue Floor Tile (5-10% Chrysotile)
First Floor Corridors, Second Floor Room 201	9x9 White Floor Tile (5% Chrysotile) Mastic Under 9x9 White Floor Tile (5-10% Chrysotile)
First Floor Room 153 -	12x12 White Floor Tile/Brown Streaks (5% Chrysotile)

These non-friable materials did not exhibit damage at the time of the survey.

VII. ACTION PLAN PRIORITIES

Physical Assessment and Response Action Summary

The survey of the Federal Building (NM0005ZZ) in Carlsbad, New Mexico has identified the presence of asbestos fibers in several types of building materials. The physical condition of all of these materials represent some level of concern and associated response action. It is imperative that an updated ACTION PLAN take into consideration the results of this Building Audit Survey documentation. This will assist in prioritizing required administrative actions, as well as preventing any additional damage or release of any suspect ACM from occurring in these identified materials.

Based on the observations documented and the physical assessment of conditions for future disturbance or degree of damage identified, **EPA/AHERA** criteria have standardized the following specific **Decision Tree/Response Action Key** recommendations for the types of materials identified:

Response Action #	Action Plan Priority
4	HIGH

Action Plan Description

Repair, continue O&M. Number indicates priority if all repairs cannot be done immediately.

Thermal System Insulation

REMOVAL COST ESTIMATES

Material Type	Location	Quantity	Unit Price	Cost
Refrigerant Suction Line/Fitting	B-5 Mechanical Room	3 lin ft	Obtain Quote	----
		2 each	Obtain Quote	----
Dom. Water Fitting	Mechanical areas near water Heater and Boiler	3 each	Obtain Quote	----

Response Action #	Action Plan Priority
5	HIGH

Action Plan Description

Repair, continue O&M. Number indicates priority if all repairs cannot be done immediately.

Thermal System Insulation

REMOVAL COST ESTIMATES

Material Type	Location	Quantity	Unit Price	Cost
Dom. Water Fittings	First Floor Pipe Chase	6 each	Obtain Quote	----

Response Action #	Action Plan Priority
6	MODERATE

Action Plan Description

Continue O&M. Take preventive measures to reduce disturbance. Number indicates priority for removal.

Thermal System Insulation

REMOVAL COST ESTIMATES

Material Type	Location	Quantity	Unit Price	Cost
Boiler Exhaust Flue	Mechanical Room	120 sq ft	$25.00/sq ft	$ 3,000.00
Boiler Refractory	Mechanical Room	150 sq ft	$25.00/sq ft	$ 3,750.00
HVAC Duct Wrapping	Mechanical Rm, 1st Fl	1,150 sq ft	$25.00/sq ft	$ 28,750.00
HVAC Duct Mastic	Mechanical Room	16 lin ft	$20.00/ft	$ 320.00
Domestic Water Fittings	Mechanical Room, First Floor Pipe Chase	120 each	$35.00 each	$ 4,200.00
Heating Water Fittings	Mechanical Room, Crawl Space	59 ea	$35.00 each	$ 2,065.00
Refrigerant Line Fitting	Mechanical Room	26 ea	$35.00 each	$ 910.00

Response Action #	Action Plan Priority
7	MODERATE

Action Plan Description

Continue O&M. Take preventative measures to reduce disturbance. Number indicates priority for removal.

Thermal System Insulation

REMOVAL COST ESTIMATES

Material Type	Location	Quantity	Unit Price	Cost
HVAC Duct Wrapping	Concealed Spaces	400 sq ft	$25.00/sq ft	$ 10,000.00
Domestic Water Fittings	Concealed Spaces	112 each	$35.00 each	$ 3,920.00
Heating Water Fittings	Concealed Spaces	34 each	$35.00 each	$ 1,190.00
Roof Drain Fittings	Concealed Spaces	4 each	$35.00 each	$ 140.00

NOTE: Quantities of ACM in Plenum areas and chases estimated using visual observation and original building drawings.

Response Action #	Action Plan Priority
8	LOW

Action Plan Description

Continue O&M, until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change.

Miscellaneous ACM Materials

REMOVAL COST ESTIMATES

Material Type	Location	Quantity	Unit Price	Cost
9x9 Brown Floor Tile	Basement Corridors Locker & Toilet Rooms	650 sq ft	$4.00/sq ft	$ 2,600.00
9x9 Blue Floor Tile	First Floor Offices	10,355 sq ft	$4.00/sq ft	$ 41,420.00
9x9 White Floor Tile	First Floor Corridors, Second Floor Office	2,249 sq ft	$4.00/sq ft	$ 8,996.00
12x12 White Floor Tile with Brown Streaks	Room 153 Office	138 sq ft	$4.00/sq ft	$ 552.00
*Floor Tile Mastic:				
9x9 Brown Floor Tile	Basement Corridors, Locker & Toilet Room	650 sq ft	$4.00/sq ft	$ 2,600.00
9x9 Blue Floor Tile	First Floor Offices	10,355 sq ft	$4.00/sq ft	$ 41,420.00
9x9 White Floor Tile	First Floor Corridors, Second Floor Office	2,249 sq ft	$4.00/sq ft	$ 8,996.00
12x12 White Floor Tile with Brown Streaks	Room 153 Office	138 sq ft	$4.00/sq ft	$ 552.00

* Includes Mastic beneath 9"x9" floor tile and a small amount of 12"x12" floor tile found throughout the building. Since some 9"x9" floor tile was overlain by carpet in some areas, the quantity estimate reflects only the amount that could be verified visually or by GSA knowledge at the time of the survey. Floor tile mastic can be removed concurrently with floor tile at a Unit Price of $4.00 per square foot for both.

General Recommendations

1. Additional sampling and physical inspections of all identified/suspect ACM materials prior to any scheduled renovation, demolition, or disturbance or the areas identified are recommended. Classify all referenced suspect materials as asbestos-containing until laboratory tests prove otherwise.

2. Patch and repair **IMMEDIATELY** any damaged ACM areas. Schedule Response Actions 4 and 5 as soon as practical consistent with building operations and maintenance. Damaged pipe fittings could be repaired by AHERA trained maintenance personnel if available. Fibers on floor or adjacent objects - as in pipe chase - should be removed by HEPA filtered vacuum before repairs are started.

3. All identified damaged suspect asbestos-containing materials that could possibly be disturbed should be removed prior to any renovation/demolition/disturbance.

4. Maintain all identified/suspect ACM in good condition until removed or replaced.

5. Annually, hereafter, verify contractor/building maintenance personnel with updated EPA/AHERA accredited asbestos training, to provide adequate administrative support in understanding the identified asbestos building conditions and the options available in maintaining and servicing these materials safely.

The provided Building Audit Survey documentation will assist the Facility Asbestos Control Manager with the development of standardized EPA/AHERA Action Response Key References, for site-specific materials conditions and their respective potentials for damage.

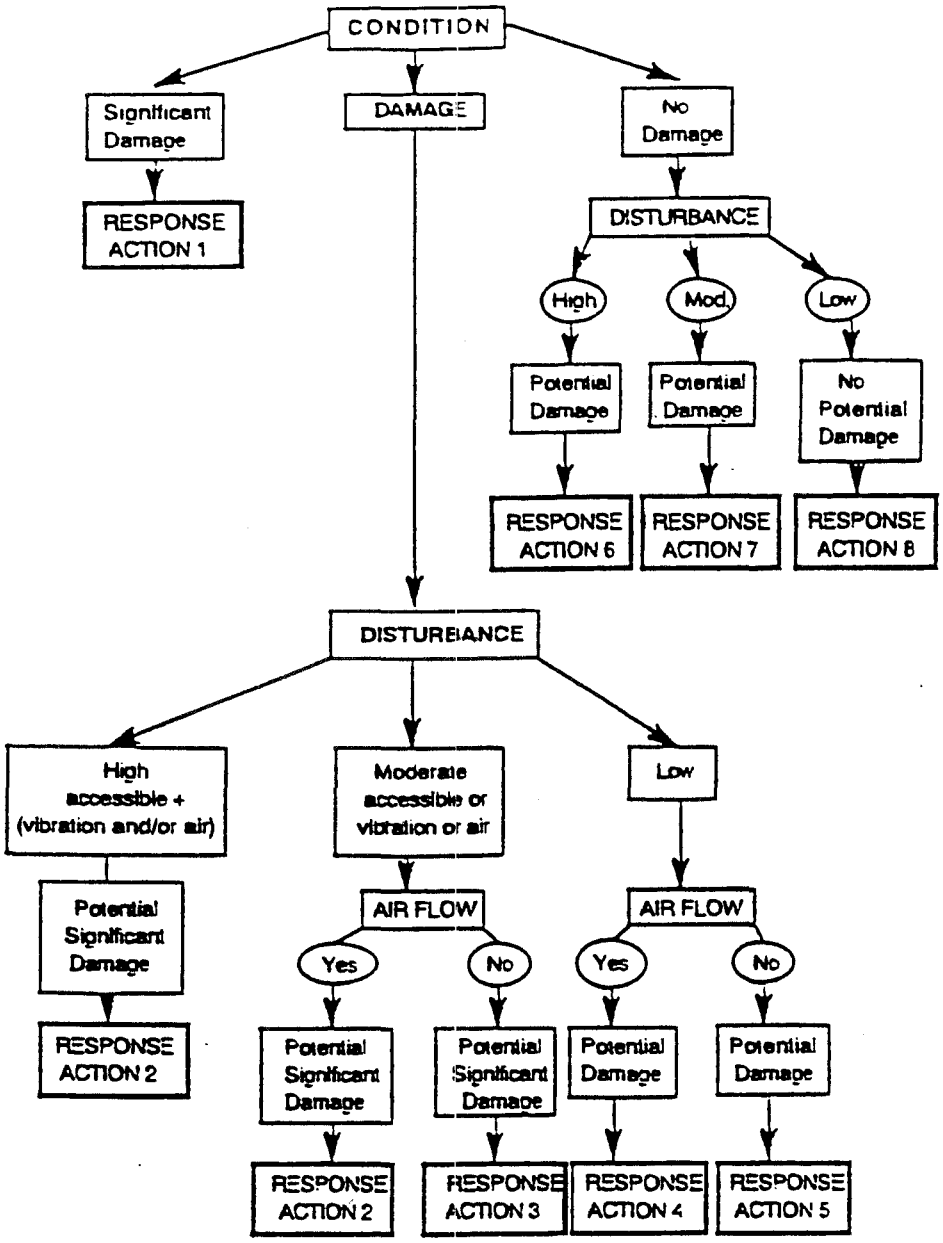
Another administrative consideration for the resulting Audit Survey documentation is background information for the establishment of frequencies for air monitoring surveys and visual inspections, when there are indications that materials could become damaged by changes in building use, changes in operations and maintenance practices, or with changes in occupancy.

A review of this report should be performed prior to scheduling any renovation or demolition work within this building to assure that all suspect asbestos-containing material locations have been identified. Subsequent to this inspection, if a previously concealed or undetermined suspect building material is identified, it shall be treated as asbestos-containing, until laboratory analysis proves otherwise.

NOTE: See Figure 2- EPA/AHERA LOGIC/DECISION TREE for THERMAL SYSTEM INSULATION and Figure 3- EPA/AHERA MODIFIED LOGIC/DECISION TREE for SURFACING MATERIALS. The decision tree for miscellaneous materials is identical to the decision tree for surfacing materials.

FIGURE 2

DECISION TREE DIAGRAM for THERMAL SYSTEM INSULATION

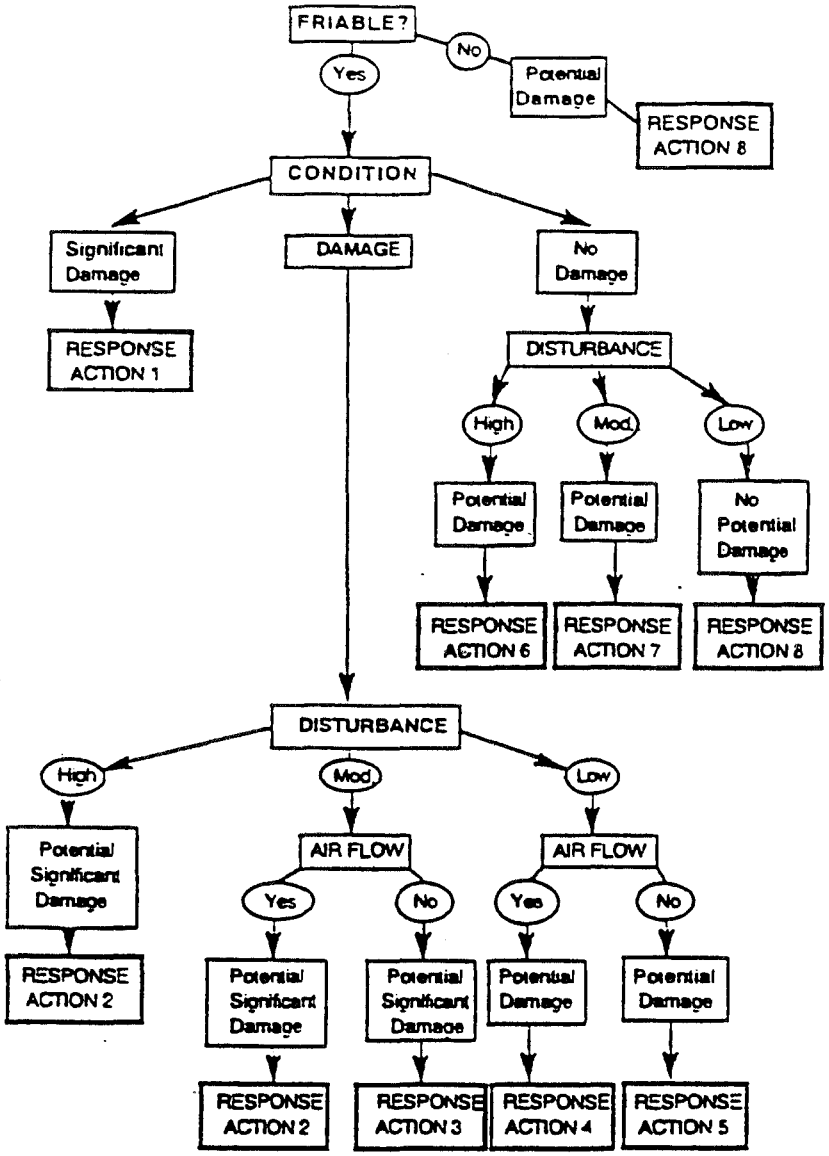


RESPONSE ACTIONS KEY

1. Isolate area and restrict access. Remove as soon as possible.
2. Continue O&M. Repair or remove as soon as possible, or reduce potential for disturbance.
3-5. Repair, continue O&M. Number indicates priority if all repairs cannot be done immediately.
6-7. Continue O&M. Take preventative measures to reduce disturbance. Number indicates priority for removal.
8. Continue O&M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change.

FIGURE 3

DECISION TREE DIAGRAM for SURFACING MATERIALS



RESPONSE ACTIONS KEY

1. Isolate area and restrict access. Remove as soon as possible.
2. Continue O&M. Remove as soon as possible, or reduce potential for disturbance.
3. Continue O&M. Schedule removal when practical or cost effective, or reduce disturbance.
4-5. Continue O&M. Schedule removal when practical or cost effective. Number indicates priority for removal.
6-7. Continue O&M. Take preventative measures to reduce disturbance. Number indicates priority for removal.
8. Continue O&M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change.

Note: An O&M program may include enclosure and encapsulation, where appropriate to increase effectiveness of O&M.